NWS Form E-5 U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL WEATHER SERVICE **MONTHLY REPORT OF HYDROLOGIC CONDITIONS**	**HYDROLOGIC SERVICE AREA:** Pocatello, Idaho (PIH) **REPORT FOR:** **MONTH:** November **YEAR:** 2017
TO: Hydrologic Operations Division, W/OH2 National Weather Service National Oceanic and Atmospheric Administration Silver Spring, Maryland 20910	**SIGNATURE** Travis Wyatt Service Hydrologist / Acting **DATE:** January 1, 2018
When no flooding occurs, include miscellaneous river conditions, such as significant rises, record low stages, ice conditions, snow cover, droughts and hydrologic products issued (NWS Instruction 10-924).	

X **An X in this box indicates that *no* flooding has occurred for the month within this hydrologic service area.**

Overview:

Most of the area except the Upper Snake River plain saw above normal precipitation. The five climate stations (Burley, Challis, Idaho Falls, Pocatello and Stanley) ranged from 0.68 inch of precipitation (0.16 above average) for Challis to 5.51 inches of precipitation (3.40 above average) for Stanley. There were five precipitation records for the month of November for our five climate locations: one in Burley, one in Idaho Falls, one in Pocatello, and two in Stanley. The highest recorded monthly precipitation totals (non-SNOTEL and non-RAWS) were 6.52, 5.51, 4.00, and 3.75 inches respectively at the Ketchum CO-OP, Stanley Ranger, Stanley CO-OP, and the Island Park CO-OP stations. The highest recorded 24-hr precipitation (non-SNOTEL and non-RAWS) occurred at the Hailey CoCoRaHS, Bellevue CO-OP, Ketchum CO-OP and the Island Park CO-OP stations where 1.48, 1.33, 1.30 and 1.30 fell respectively all on the 16th. All basins were above normal. Basin ranged from 113 to 197 percent of normal. The basins receiving the greatest precipitation were the Big Lost abv Mackay, Big Lost, and the Blackfoot Basins receiving 197%, 189%, and 168% of average precipitation respectively for the month of November-based on SNOTEL data. The basins receiving the least precipitation were the Malad, Bear river abv WY-ID line, and the Bear river abv ID-UT line receiving 113%, 119%, and 126% respectively for the month of November-based on SNOTEL data.

Mean average temperatures ranged from 25.9 degrees F for Stanley to 44.9 degrees F for Paul across the HSA. Most of the area was 3 to 6 degrees above normal with our extreme Northwest areas 1 to 3 above normal. The five climate stations ranged from 2.7 degrees above normal for Stanley to 5.7 degrees above normal for Pocatello. There were 11 high temperature records for the month of November for our five climate locations: three in Burley, three in Challis, one in Idaho Falls, three in Pocatello, and one in Stanley. Of the data available for the month, the stations (non-SNOTEL and non-RAWS) within the HSA reaching the highest 24-hour temperatures were Shoshone COOP, Oakley COOP, and Burley Airport reaching 69°F, 69°F, and 68°F respectively all on the 22nd. The stations (non-SNOTEL and non-RAWS) with the lowest recorded temperature were the Stanley, Craters of the Moon, and Chilly Barton Flats COOP stations at -8°F, 2°F, and 2°F respectively on the 7th, 7th and 19th .

As far as the short-term 8 to 14 day Climate Prediction Center Outlook is concerned, the eastern Idaho forecast is a 33 to 40% percent chance for above normal temperatures and a 40 to 50 percent chance for above normal precipitation. The one-month forecast graphics are below for both December and January. For the three-month outlook, the temperature forecast is a 33 percent chance to be above normal for our extreme southern areas and

equal chances for above or below normal temperatures elsewhere. As for three-month outlook for precipitation, the outlook is a 33 to 40% percent chance for above normal.

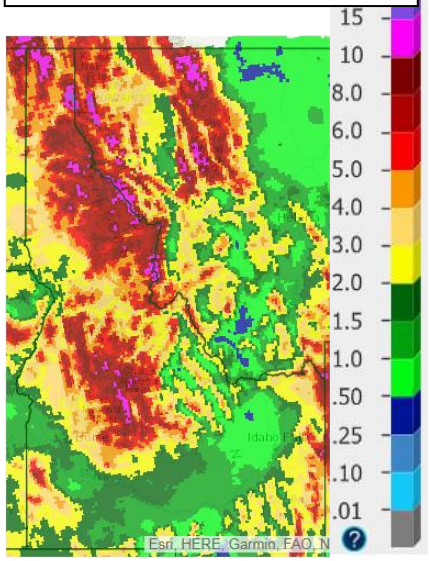
Storage for reservoirs in the Upper Snake River basin system for November decreased by 5% over the month of October with streamflow above normal. As of December 21, 2017 the Upper Snake River system was sitting at 87% of capacity. Compared to last year at that time, it was about 42% of capacity. As of November 30, 2017, Oakley, Ririe, Little Wood, Magic, Blackfoot and Jackson had the lowest percent of average capacity at 42%, 50%, 58%, 73%, 76 and 77% of average respectively. As of November 21, 2017, Milner had 69% of average. All other reservoirs were at or above 80% capacity. All reservoirs as of November 30, 2017 were 106 % or higher above average for that time of year. Some reservoirs were well above average for that time of year. Magic, Mackay, and Bear Lake reservoirs were at 230%, 229% and 181% above average for that time of year.

Current streamflow conditions in eastern Idaho are much above normal for the Big Wood and Big Lost. They are high for the headwaters of the Salmon. The rest of the basins are above normal (see USGS streamflow graphic below).

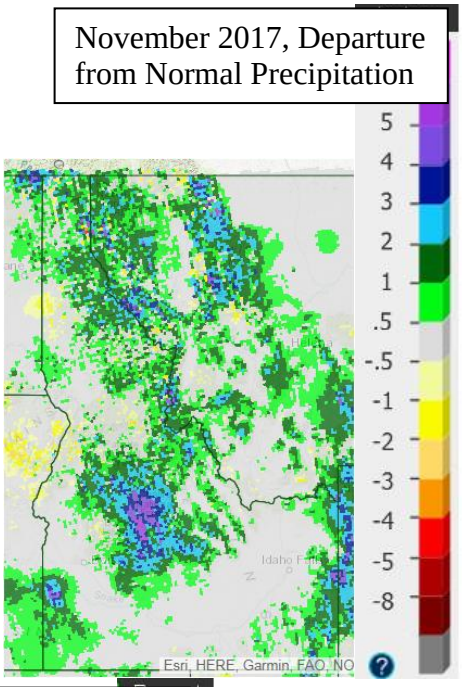
There are no drought conditions across Idaho as reflected on the latest U.S. Drought Monitor. The latest update of the U.S. Seasonal Drought Outlook shows Idaho continuing to have no drought conditions.

Precipitation:

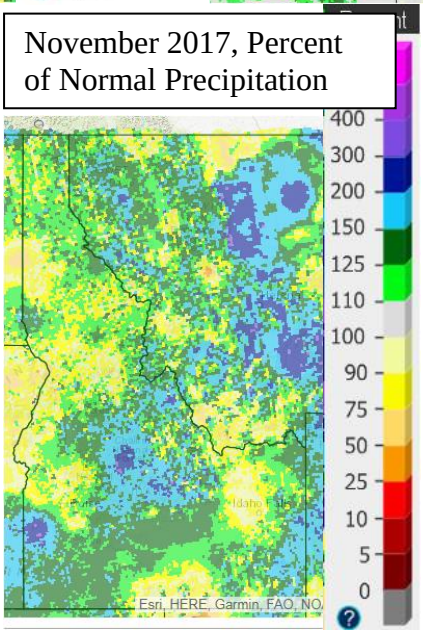
November 2017, Observed Precipitation



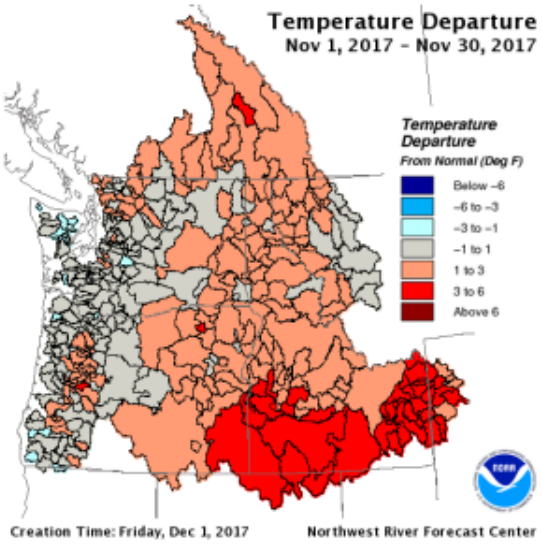
November 2017, Departure from Normal Precipitation



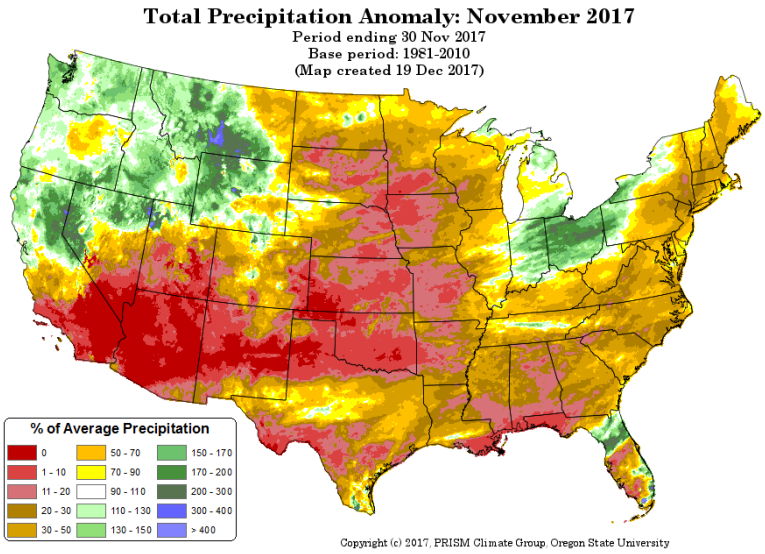
November 2017, Percent of Normal Precipitation



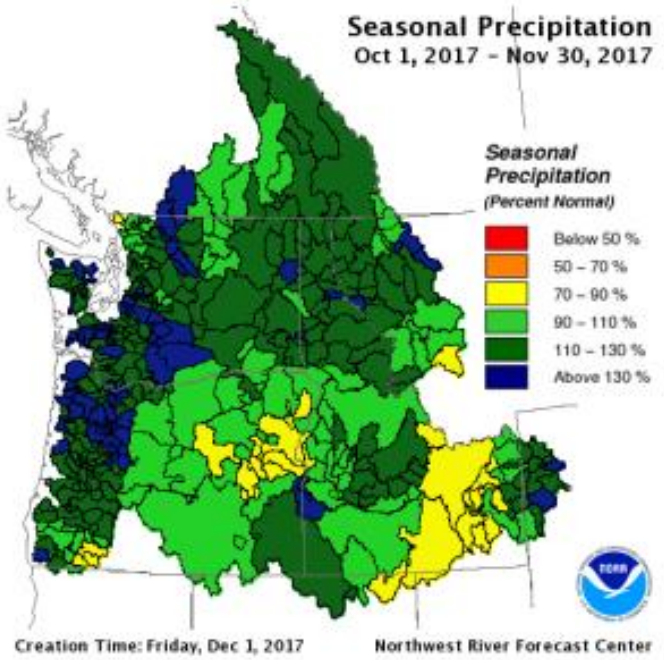
http://water.weather.gov/precip/



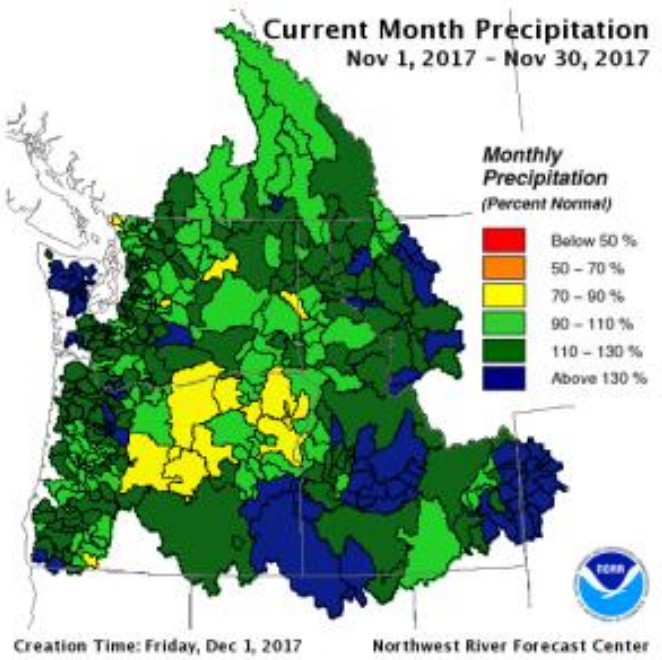
https://www.nwrfc.noaa.gov/WAT_RES_wy_summary/20170701/CurMonMAT_2017Jun30_2017070117.png



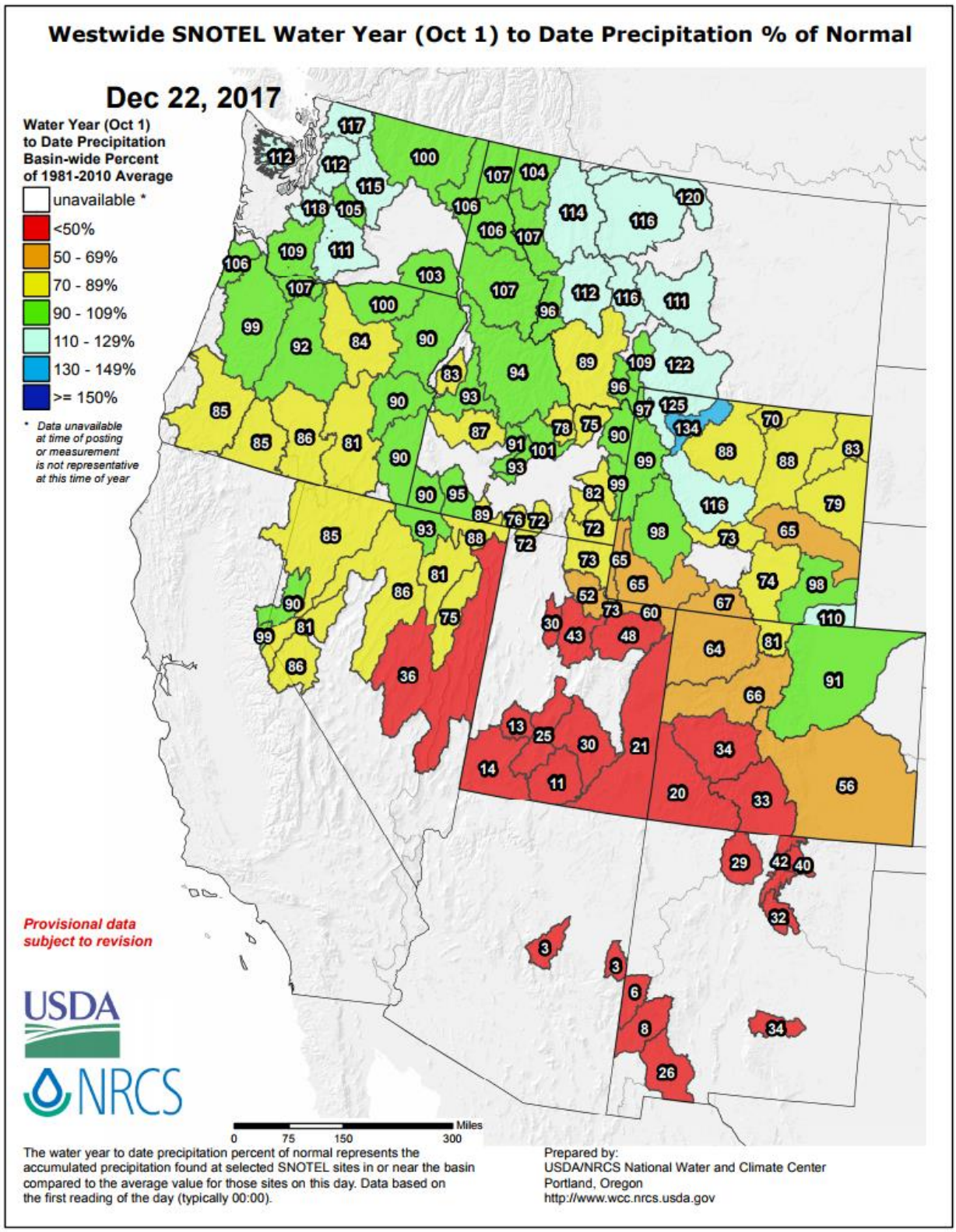
http://prism.oregonstate.edu/comparisons/anomalies.php



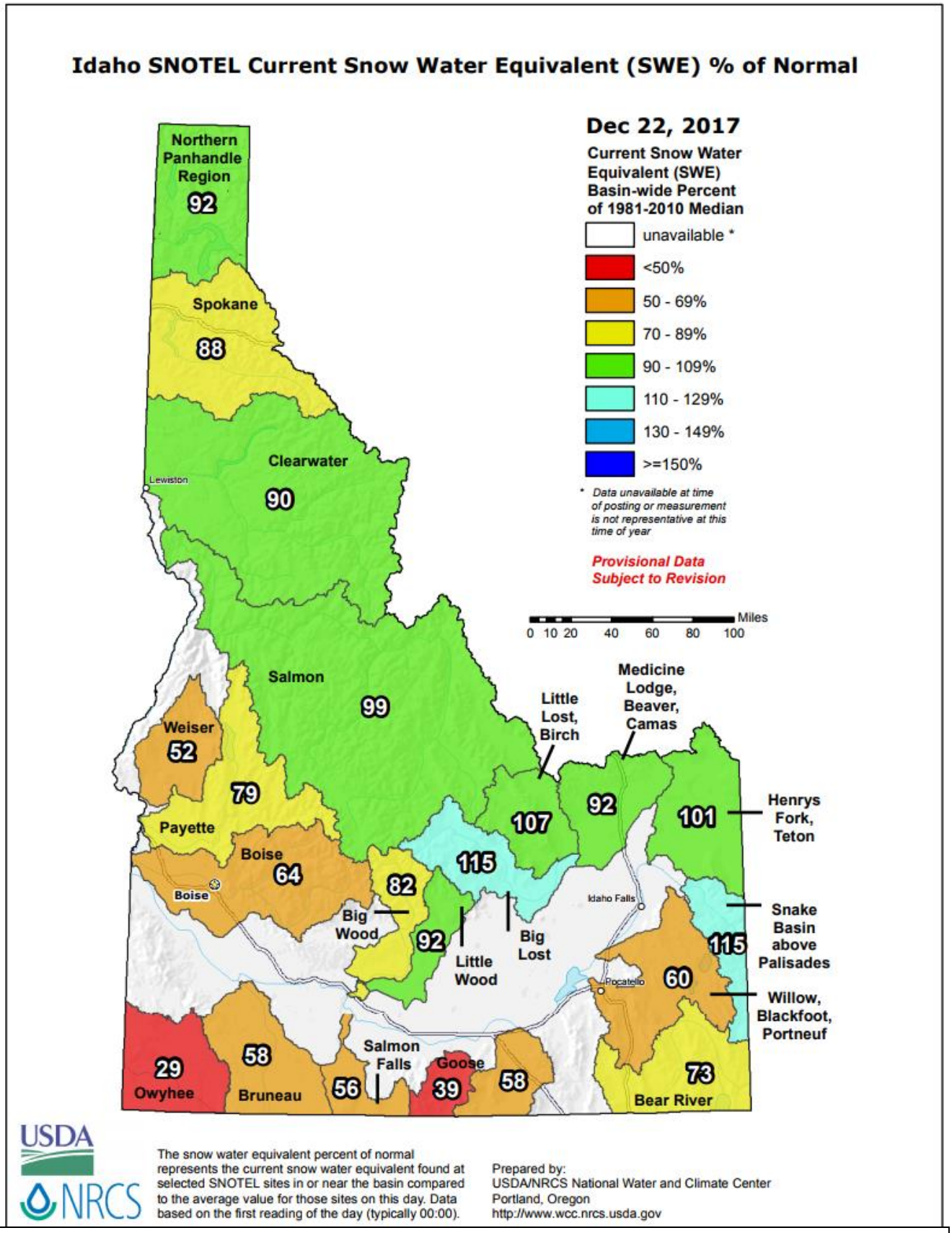
https://www.nwrfc.noaa.gov/WAT_RES_wy_summary/20170701/CurMonMAT_2017Jun30_2017070117.png



https://www.nwrfc.noaa.gov/WAT_RES_wy_summary/20170701/CurMonMAP_2017Jun30_2017070117.png

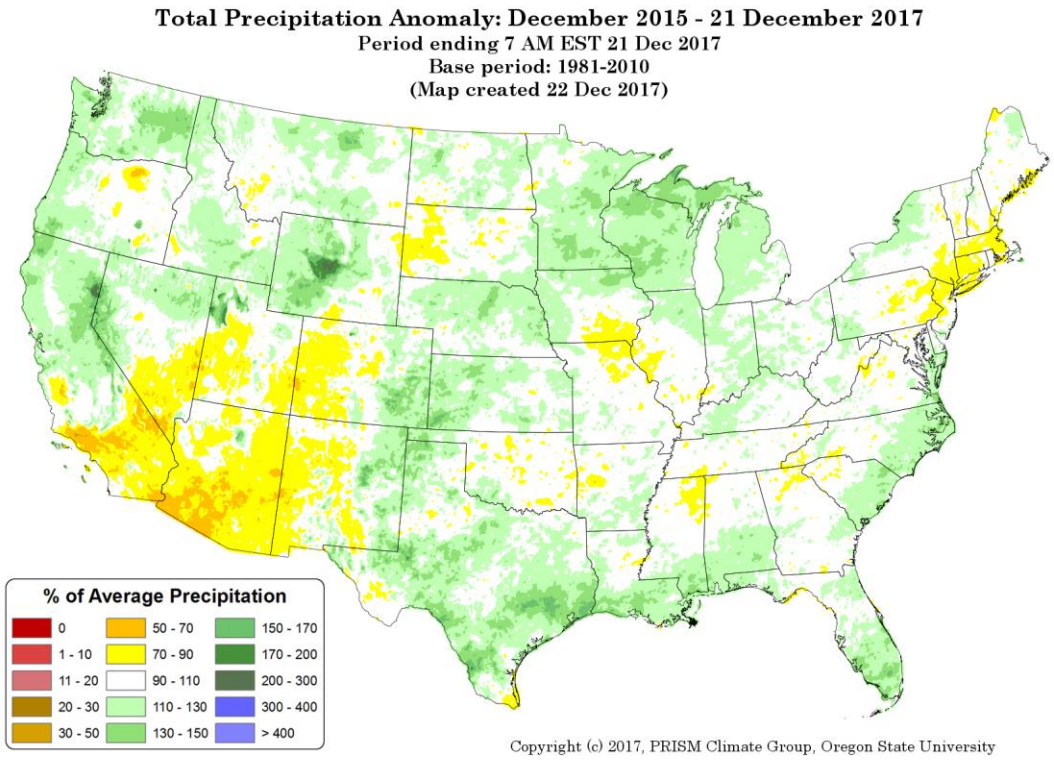


http://www.wcc.nrcs.usda.gov/ftpref/data/water/wcs/gis/maps/west_wytdprecpctnormal_update.pdf

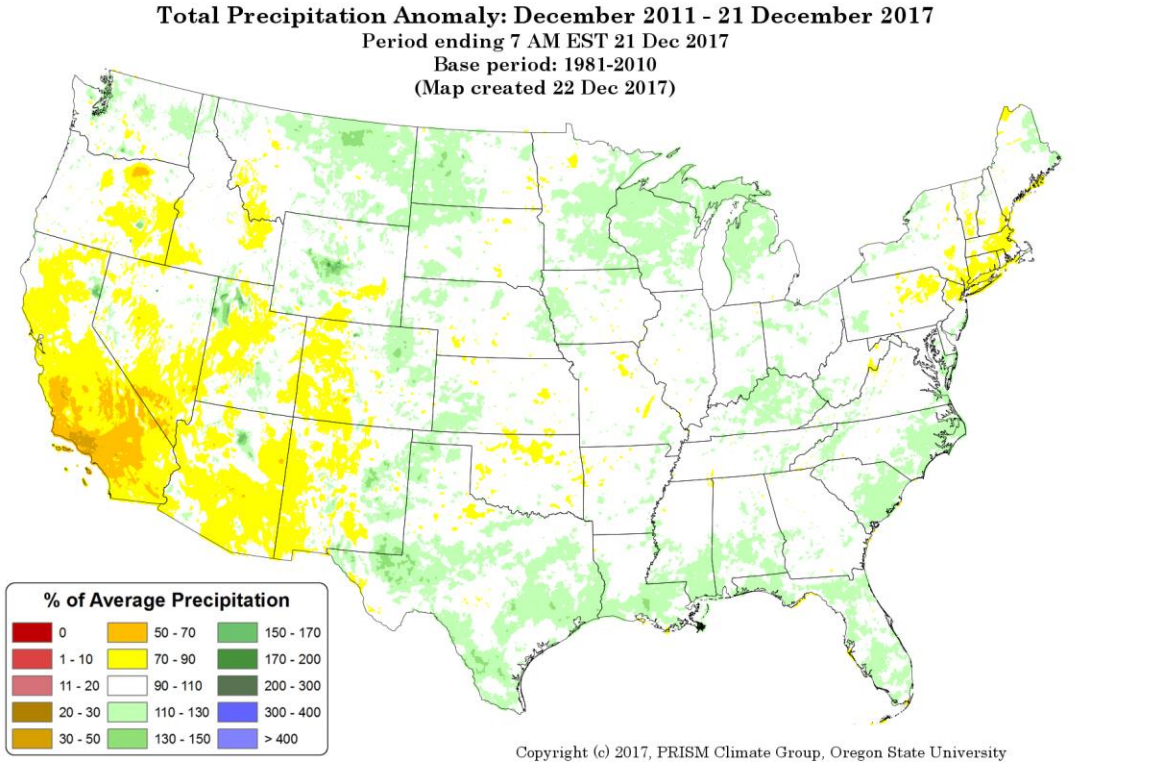


https://www.wcc.nrcs.usda.gov/ftpref/data/water/wcs/gis/maps/id_swepctnormal_update.pdf

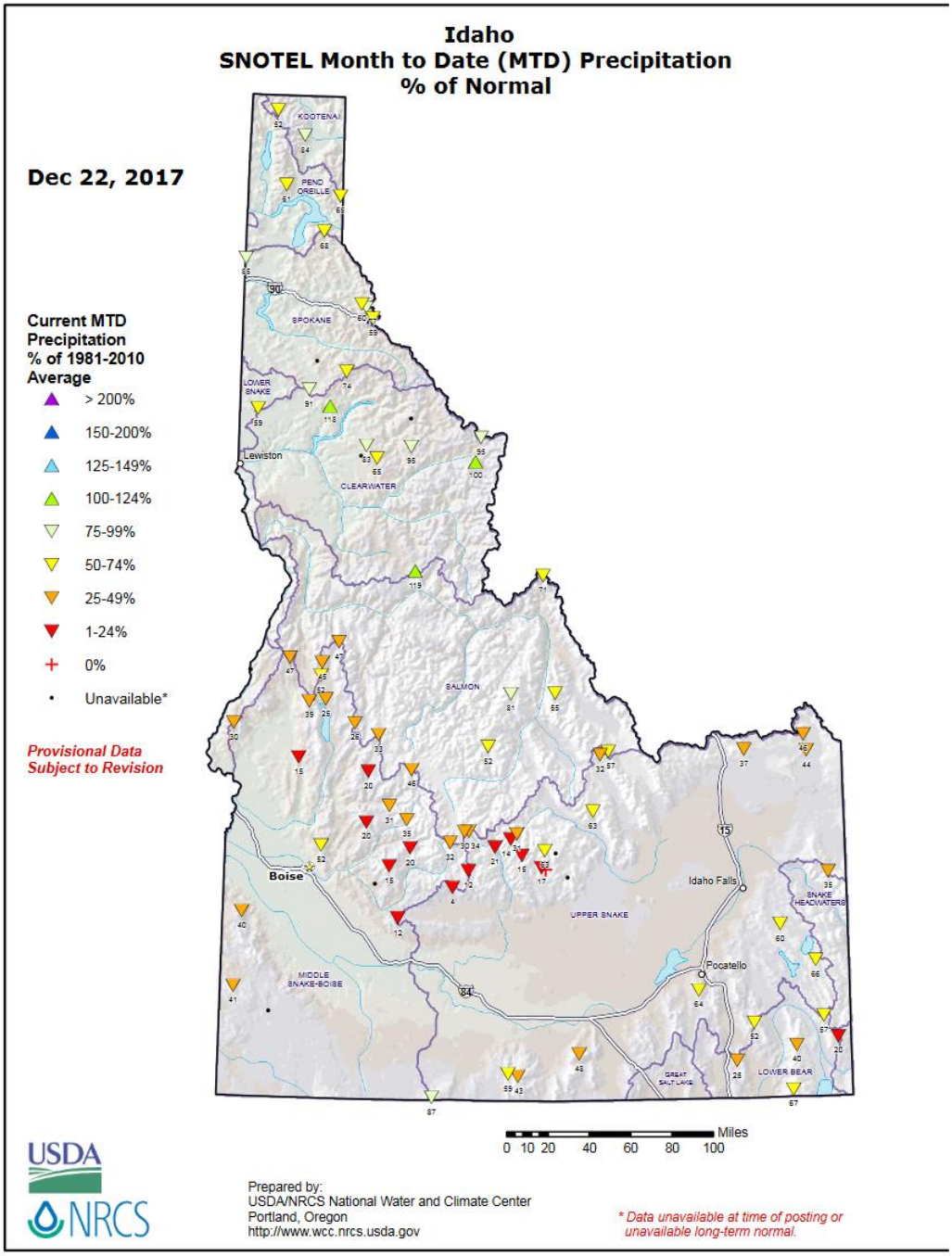
Past 2 Years of Precipitation % of Average:



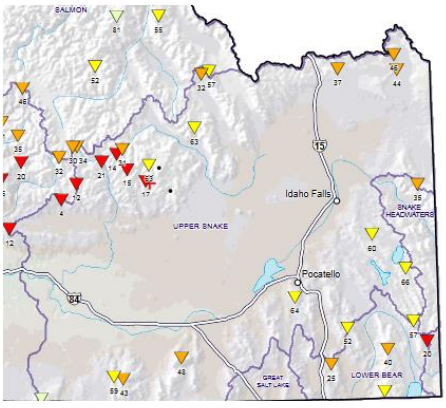
Past 6 Years of Precipitation % of Average:



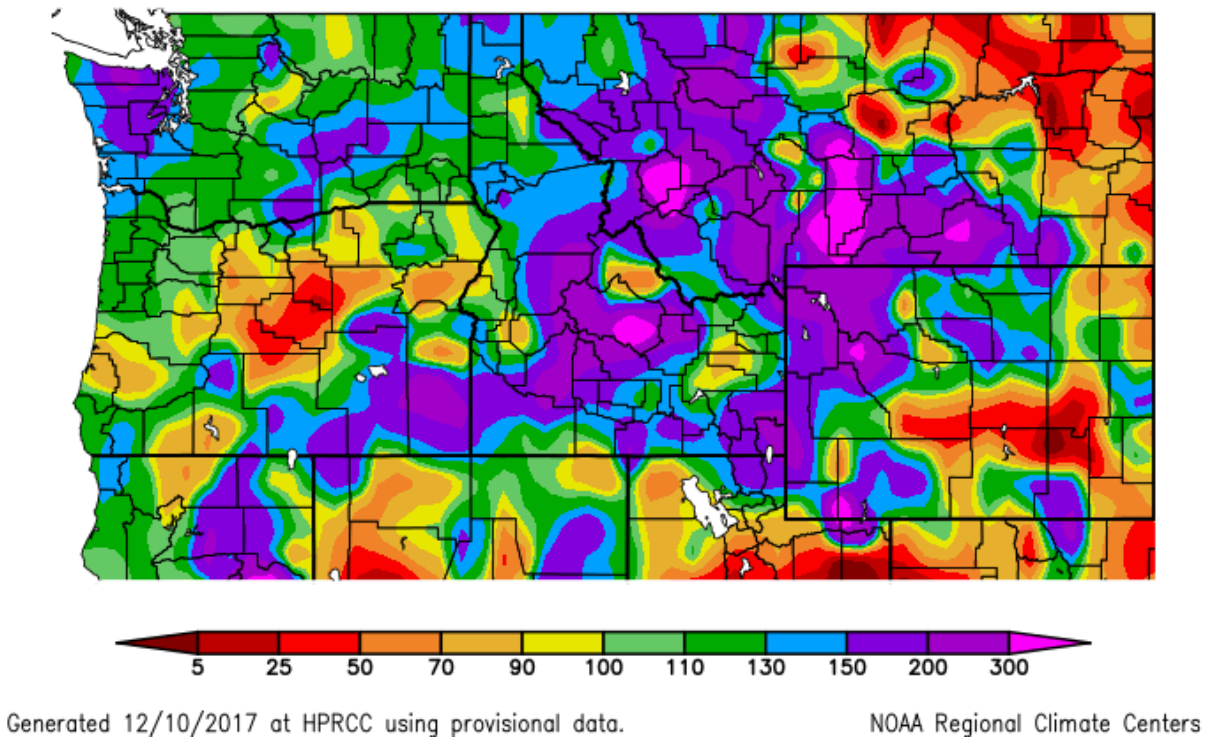
www.prism.oregonstate.edu/comparisons/drought.php



http://www.wcc.nrcs.usda.gov/ftpref/data/water/wcs/gis/maps/id_mtdprecpctnormal.pdf



SNOTEL MTD % of Normal Precipitation for thru Mid December 2017
(image is cropped from above image)

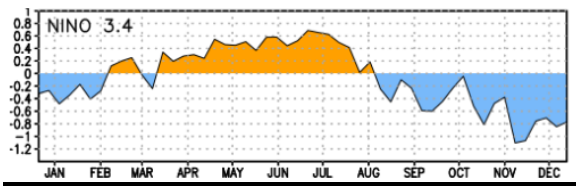


http://www.hprcc.unl.edu/maps.php?map=ACISClimateMaps

Most of our area received above normal with most mountain ranges receiving 130 to 200 percent of normal. Only a portion of the Upper Snake river plain received slightly below normal.

ENSO Update:

Latest Observed SST Departure:
Niño 3.4 ~ -0.8 Deg C



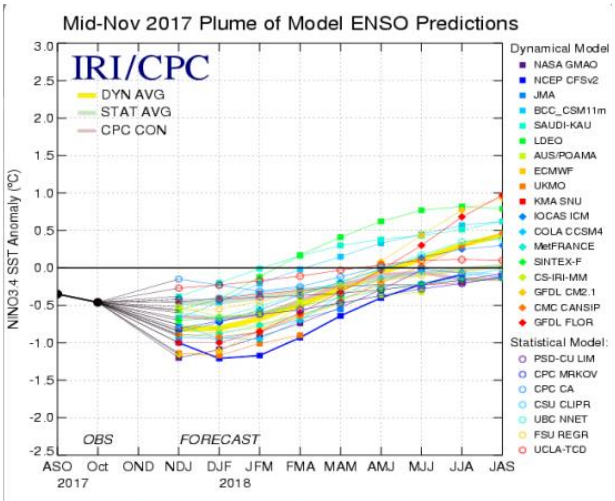


Figure provided by the International Research Institute (IRI) for Climate and Society (updated 17 November 2017).

www.cpc.ncep.noaa.gov, **iri.columbia.edu/climate/ENSO**

CPC Synopsis: La Nina conditions are present. La Nina is likely (~80% chance) through the Northern Hemisphere winter 2017-18, with a transition to ENSO-neutral most likely during the mid-to-late spring.

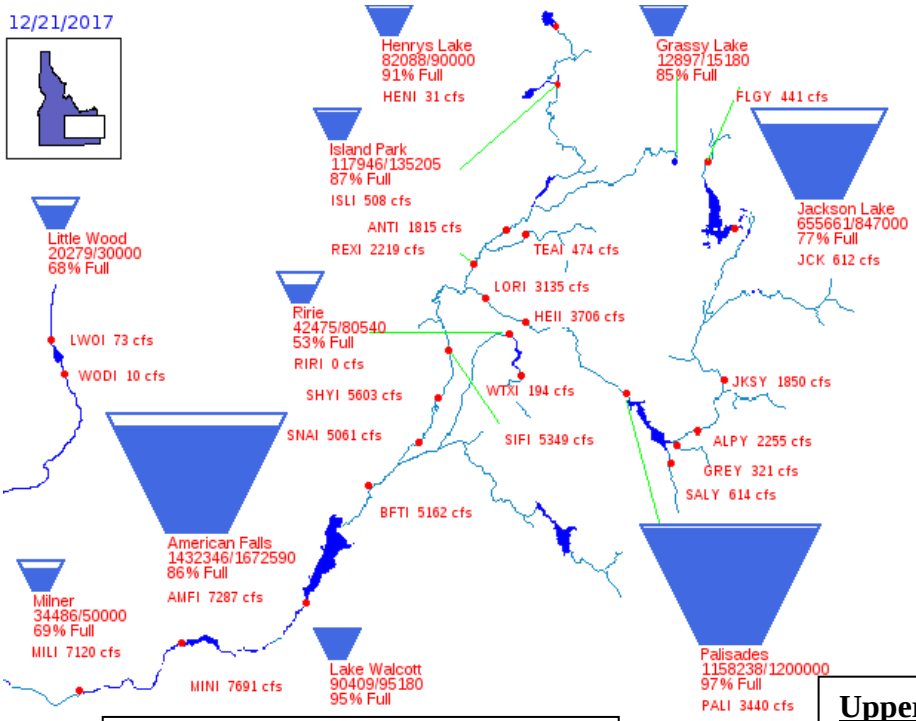
Note: Equatorial sea surface temperatures (SSTs) are below average across the central and eastern Pacific Ocean. The active phase of the Madden-Julian Oscillation (MJO) is currently approaching the Western Hemisphere, but is interfering with the background La Nina state that is suppressing convection near the Date Line. Models show eastward propagation of the MJO envelope for at least the next week or so, before diverging on whether the signal will weaken or continue across the Western Hemisphere. The Pacific Decadal Oscillation (PDO) continues to be slightly negative, -0.52.

Reservoirs:

Reservoir	% Capacity August 31[1]	% Capacity September 30[2]	Percent Change	% of Average[2]	% of Average Last Year[2]
Jackson Lake	75	77	2	157	122
Palisades	78	97	+19	162	54
Henrys Lake	89	91	+2	106	100
Island Park	83	87	+4	139	78
Grassy Lake	81	84	+3	111	116
Ririe	51	50	-1	119	127
Blackfoot	74	76	+2	155	122
American Falls	63	80	+17	177	82
Mackay	86	85	-1	229	172
Little Wood	40	58	+18	159	157
Magic	65	73	+8	230	129
Oakley	39	42	+3	173	75
Bear Lake	84	81	-3	181	76
Lake Walcott	96[3]	95[4]	-1	n/a	n/a
Milner	47[3]	69[4]	+12	n/a	n/a

Source: (1) NRCS October 31, 2017; (2) NRCS November 30, 2017.
(3) US Bureau of Reclamation (BOR) Nov 21, 2017 (4) BOR Dec 21, 2017

http://www.wcc.nrcs.usda.gov/ftpref/support/water/SummaryReports/ID/BRes_12_2017.pdf

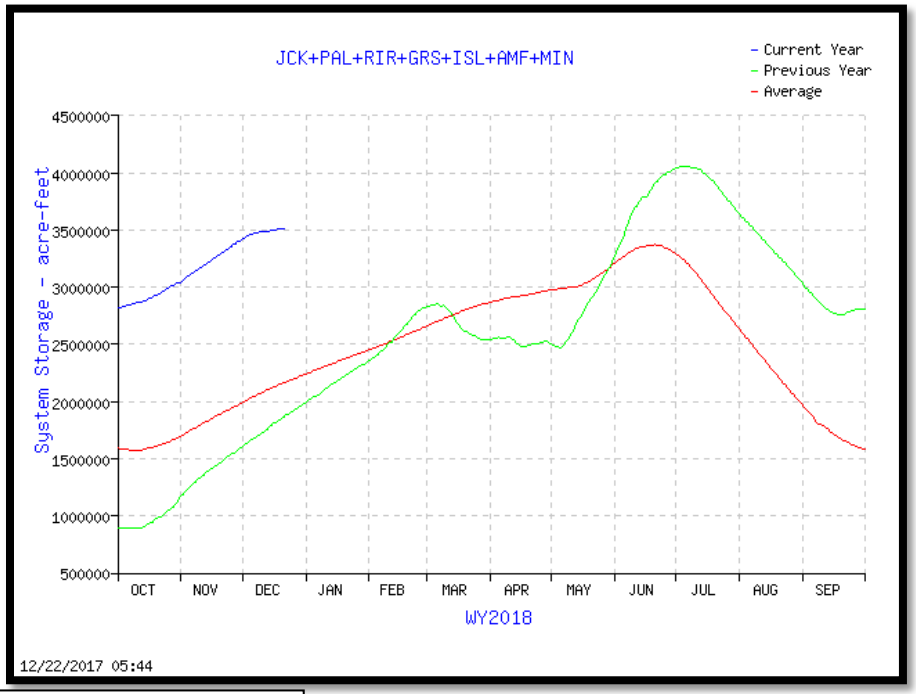


www.usbr.gov/pn/hydromet/burtea.html

87% of Capacity in Upper Snake River System
(Jackson Lake, Palisades, Grassy Lake, Island Park, Ririe, American Falls & Lake Walcott)

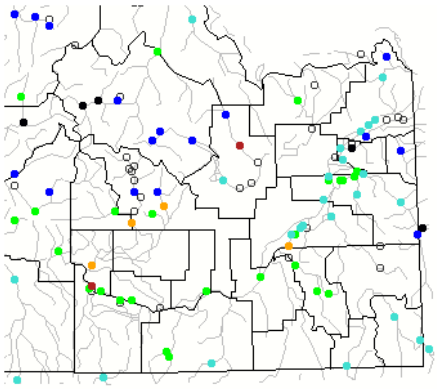
Upper Snake River:
Total Space Available: 535,723 AF
Total Storage Capacity: 4,045,695 AF

Graph of Upper Snake River Current Total System Reservoir Storage



https://www.usbr.gov/pn-bin/graphwy.pl?snasys_af

Streamflow:



Monthly average streamflow compared to historical average streamflow for November 2017.

USGS

https://waterwatch.usgs.gov/index.php?r=id&id=mv01d

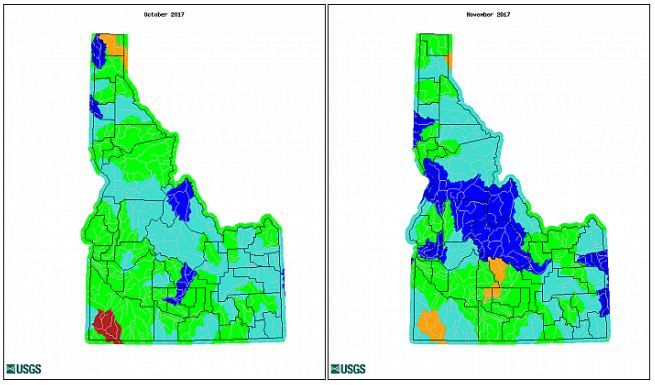
Explanation - Percentile classes							
Low	<10 Much below normal	10-24 Below normal	25-75 Normal	76-90 Above normal	>90 Much above normal	High	Not-ranked

Comparison of Streamflow Maps

Geographic area: Idaho | Water resource region: | GO

Map type: Monthly Streamflow (month of year) | Sub type: HUC Streamflow Map

Date (YYYYMM): 201710 Date (YYYYMM): 201711



Explanation - Percentile classes							
Low	<10 Much below normal	10-24 Below normal	25-75 Normal	76-90 Above normal	>90 Much above normal	High	No Data

http://waterwatch.usgs.gov/index.php?id=wwchart_map2

Drought:

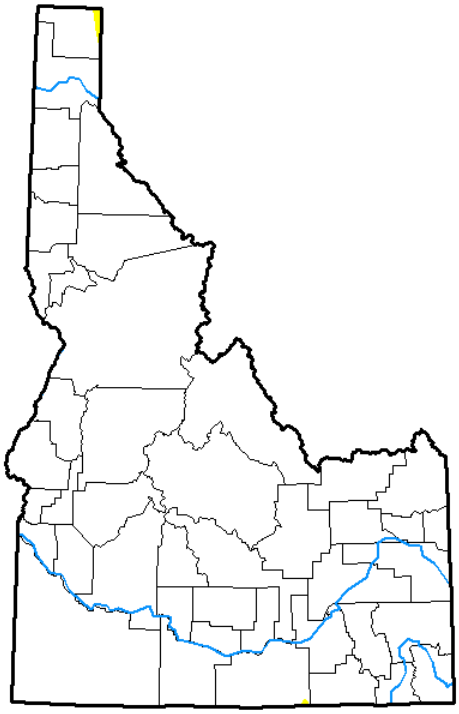
U.S. Drought Monitor

Idaho

December 19, 2017

(Released Thursday, Dec. 21, 2017)

Valid 7 a.m. EST



Intensity:

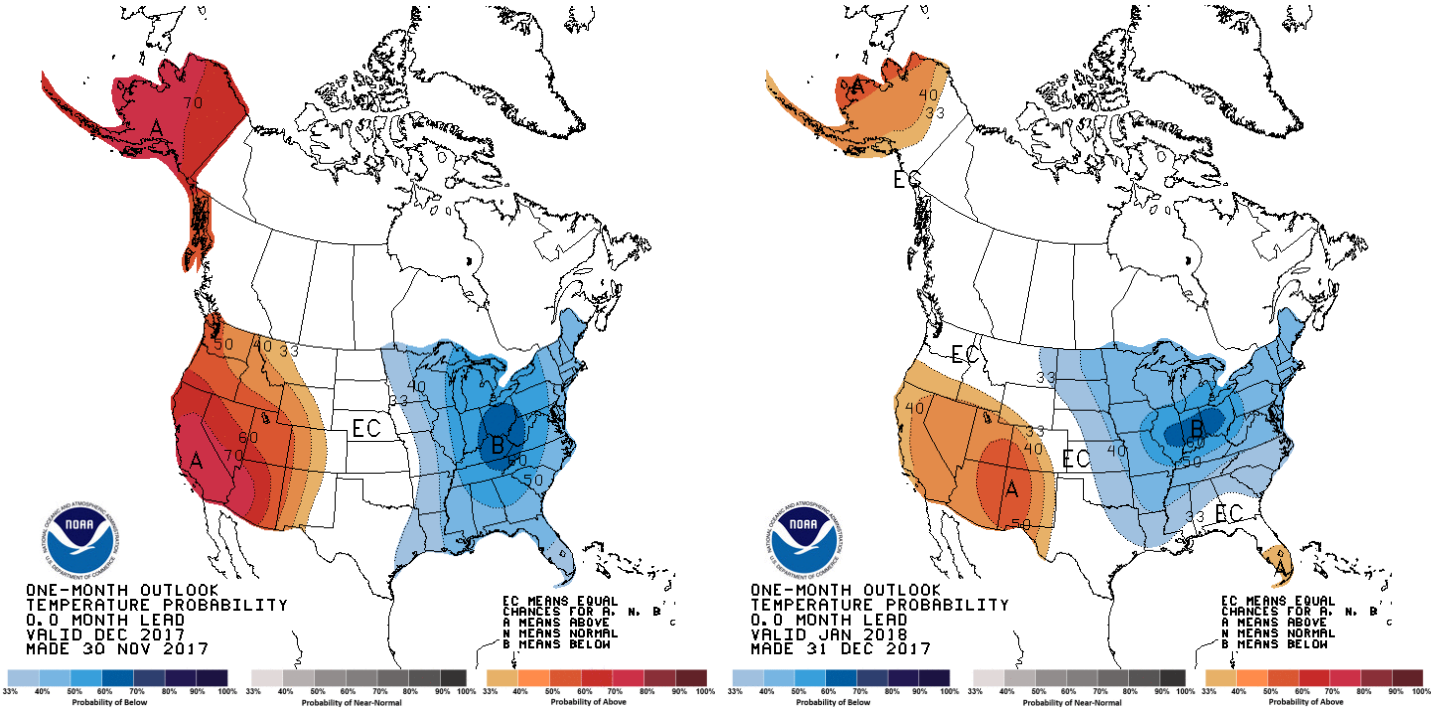
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:

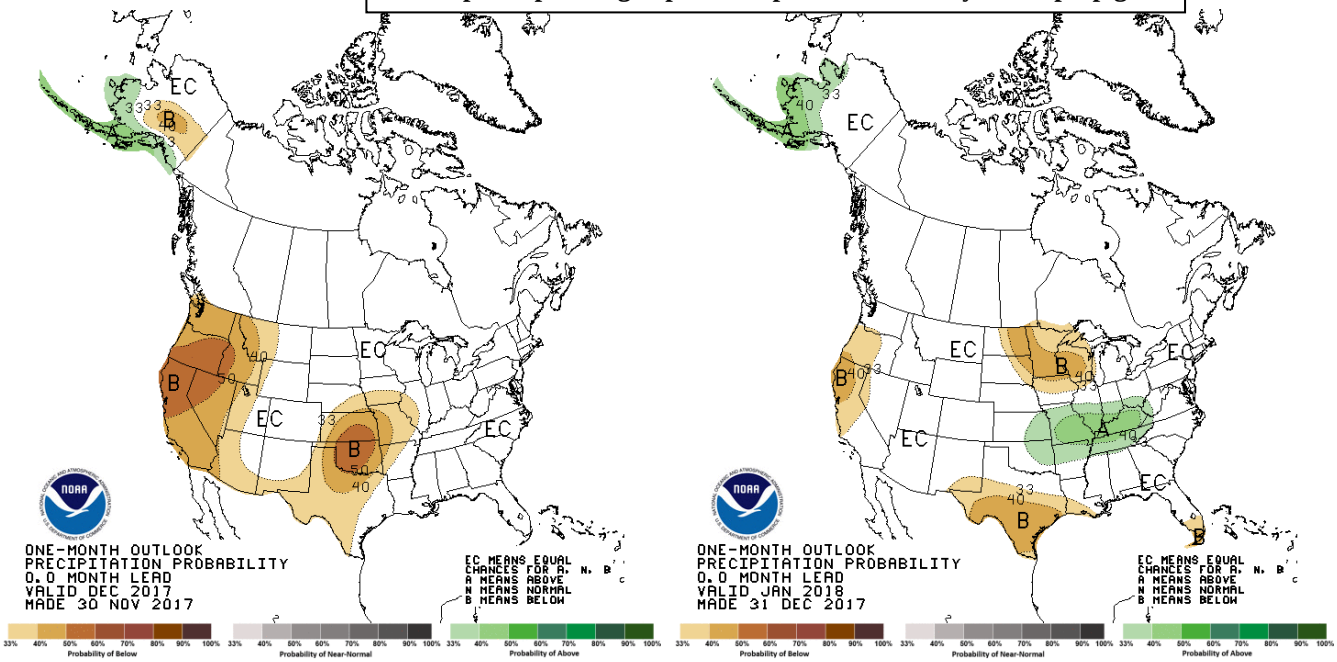
Jessica Blunden
NCEI/NOAA

http://droughtmonitor.unl.edu/



www.cpc.ncep.noaa.gov/products/predictions/30day/off15_temp.gif

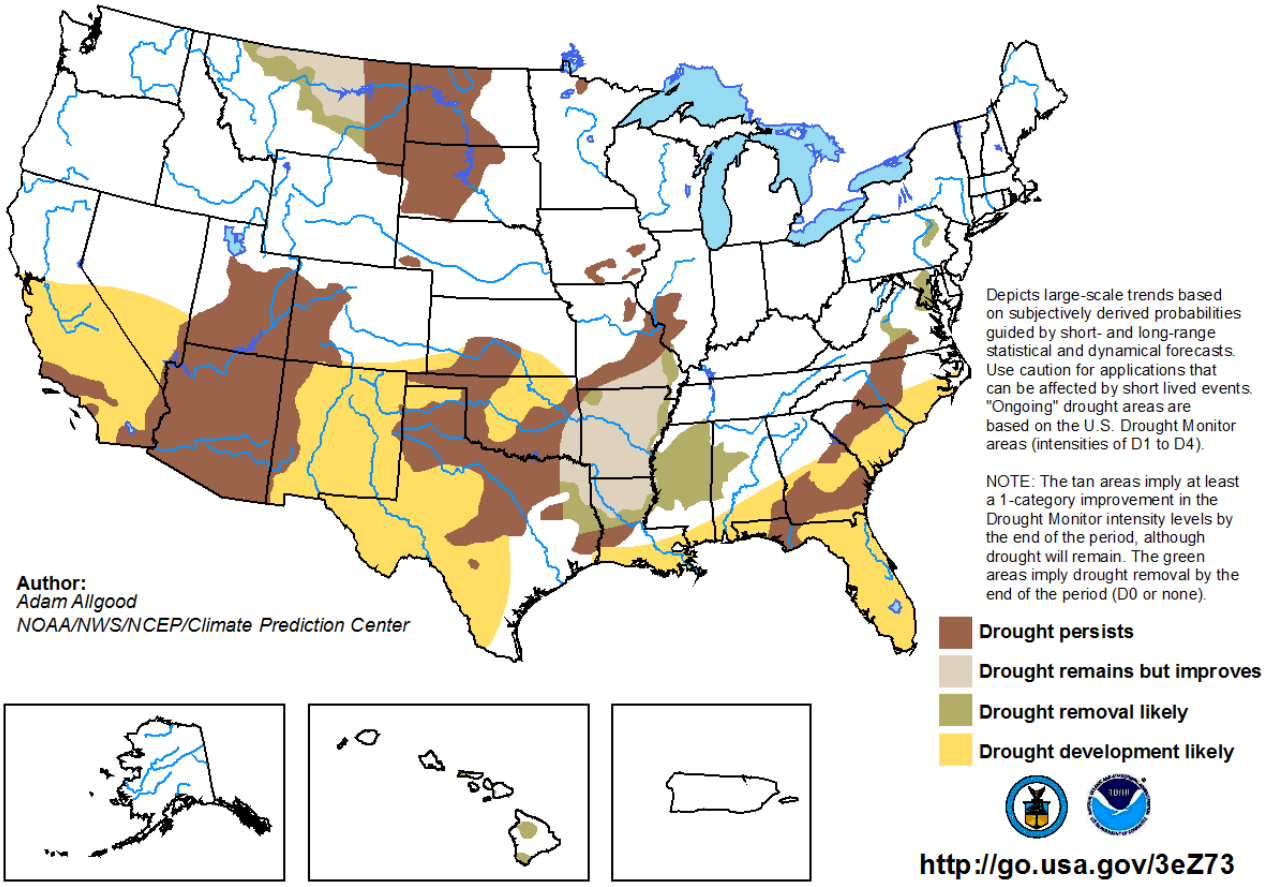
www.cpc.ncep.noaa.gov/products/predictions/30day/off15_prcp.gif



U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period

Valid for December 21 - March 31, 2018
Released December 21, 2017



Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to D4).

NOTE: The tan areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period, although drought will remain. The green areas imply drought removal by the end of the period (D0 or none).

Drought persists
Drought remains but improves
Drought removal likely
Drought development likely

Author:
Adam Allgood
NOAA/NWS/NCEP/Climate Prediction Center

http://go.usa.gov/3eZ73

www.cpc.ncep.noaa.gov/products/expert_assessment/season_drought.png

CC:

Jeff Zimmerman, Acting Western Region HCSD
Joe Intermill, Hydrologist-in-Charge, Northwest River Forecast Center
Steve King, Service Coordination Hydrologist /Acting DOH, Northwest River Forecast Center
Taylor Dixon, Development and Operations Hydrologist, Northwest River Forecast Center
Michelle Stokes, Hydrologist-in-Charge, Colorado Basin River Forecast Center
Paul Miller, Service Coordination Hydrologist, Colorado Basin River Forecast Center
John Lhotak, Development and Operations Hydrologist, Colorado Basin River Forecast Center
Hydrometeorological Information Center
Dean Hazen, Meteorologist-in-Charge, Pocatello, Idaho
Kurt Buffalo, Science and Operations Officer, Pocatello, Idaho
Vern Preston, Warning Coordination Meteorologist, Pocatello, Idaho
Troy Lindquist, Senior Service Hydrologist, Boise, Idaho
Brian McInerney, Senior Service Hydrologist, Salt Lake City, Utah
Kevin Berghoff, Senior Hydrologist, Northwest River Forecast Center
Brent Bernard, Hydrologist, Colorado Basin River Forecast Center
Patrick Kormos, Hydrologist, Colorado Basin River Forecast Center
PIH Mets/HMT (pih.ops)

End

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